

REMARKS

Claims 29-42 are presently in the application. Claims 1-28 have been canceled.

The examiner has objected to the order in which the dependent claims have been presented. The claims have been reordered and renumbered as insisted on by the examiner. The examiner will note that new independent claim 29 corresponds to former claim 10, rewritten in independent form and includes a positive recitation of "a cable outlet extending from the actuator chamber." In addition, the word "die" in original claim 9 has been replaced by the word "ram" to be consistent with the language used in the specification.

Claims 9-12, 16-18, 20-22 and 24-26 have been rejected under 35 U.S.C. 102(b) as anticipated by Cerny (US 5,288,025) and claims 20-22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cerny. Reconsideration of these rejections is requested.

Independent claim 29 is directed to a valve 1 for controlling fluids, the valve having a valve housing 10 which has an actuator chamber 11 and a laterally located inlet bore 13 that communicates with a high-pressure inlet 12, a cable outlet 17 extending from the actuator chamber 11 and the actuator chamber 11 has an actuator 30 with a ram 31 and an actuator cap 32, and the actuator chamber 11 has a conical seal, which is embodied by means of a conical face 14 on the end of the actuator chamber and a corresponding annular sealing face 33 on the actuator cap 32, and with the conical seal the cable outlet 17 can be sealed off, the improvement wherein the actuator chamber 11 comprises at least one additional inlet bore 13, wherein the inlet bores 13 and 13 are located symmetrically around the longitudinal axis of the actuator.

Applicant's claimed invention includes a conical seal in an actuator chamber 11 and an actuator dome 32 on the actuator 30 to seal off the cable outlet 17 for the actuator. Since high

pressure prevails in the actuator chamber 11, the pressure in the actuator chamber is used to press the actuator dome 32 against the sealing face 30 resulting in the sealing of the cable outlet. In order to achieve a symmetrical pressure action on the actuator dome, it is necessary to introduce the pressure forces acting on the dome in a symmetrical manner. This is accomplished in applicant's claimed invention by disposing the inlet pressure bores symmetrically around the axis of the actuator.

Cerny teaches a fuel injection valve having a valve needle 50 and an electromagnetic actuator 76 having an armature member 110. The armature member 110 is supported above the valve needle for reciprocation in bores 38, 94. The upper end portion of the valve element 50 is connected to the armature member 110 so as to move as one with the armature member. See, col. 4, ll. 56-65. The lower portion 68 of the valve needle 50 is located in an annular pressure chamber 116. Four inlet bores 120 discharge into the annular pressure chamber 116 surrounding the lower portion 68 of the valve needle 50. See, Fig. 5.

In Cerny, the electromagnetic actuator 76 is the actuator which triggers the nozzle needle. For at least this reason, the nozzle needle pressure chamber 116 cannot be read on applicant's claimed "actuator chamber." Applicant's actuator 30 is contained in the actuator chamber (see the description of the actuator chamber 11 in applicant's specification and the words of claim 29 - "the actuator chamber has an actuator").

Cerny's injection valve does not include a conical seal in the actuator chamber (the space defined by the bores 38 and 94) and an actuator dome on the actuator 110 to seal off a cable outlet for the actuator. The examiner should take special notice of the fact that there is no cable

outlet in the chamber 116 of Cerny. Therefore, the claimed “actuator chamber” cannot be read on the chamber 116 of Cerny.

Further, Cerny’s actuator chamber (the space defined by the bores 38 and 94) does not have at least two inlet bores located symmetrically around the longitudinal axis of the actuator 110.

To support a rejection of a claim under 35 U.S.C. 102(b), it must be shown that each element of the claim is found, either expressly described or under principles of inherency, in a single prior art reference. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984).

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Cerny does not teach or suggest an **actuator chamber** comprising a cable outlet and at least two inlet bores, wherein the inlet bores are located symmetrically around the longitudinal axis of **the actuator**. Thus, Cerny does not anticipate or render obvious claim 29 or any of the claims dependent thereon.

Claims 9-27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cerny in view of Yoshida et al (US Re. 34,527) and claim 28 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Cerny in view of the admitted prior art illustrated in applicant’s Fig.

1. Reconsideration of these rejections is requested.

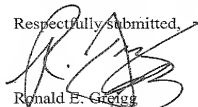
The language of former claim 13 is now present in claim 35. The language of former claim 15 is now present in claim 31. Both of these claims require a high-pressure inlet located centrally, along the center axis of the valve housing.

The examiner describes Yoshida et al as teaching a fuel injector with a central inlet 33. In fact, Yoshida et al's high-pressure inlet 33, 34 (Fig. 2) is not located centrally, along the center axis of the valve housing, as alleged by the examiner and as required by claims 31 and 35. Fig. 2 clearly illustrates that the high-pressure inlet 33, 34 is disposed to the side of the center axis of the valve housing. Thus, claims 31 and 35 are not rendered obvious over the combined teachings of Cerny and Yoshida et al.

Further, neither the admitted prior art nor Yoshida et al teaches that which is lacking in Cerny, namely, an actuator chamber with an actuator comprising a cable outlet and at least two inlet bores, wherein the inlet bores are located symmetrically around the longitudinal axis of the actuator. Thus, even if it had been obvious to combine the teachings of Cerny with the teachings of either the admitted prior art or Yoshida et al, one of ordinary skill in the art would not have arrived at the subject matter defined by applicant's claims 29-42.

Entry of the amendment and allowance of the application are respectfully requested.

Respectfully Submitted,



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